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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
09/035,617	03/05/98	TOKIMOTO T	7761-009

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EXAMINER	
NELSON, A	
ART UNIT	**PAPER NUMBER**
2775	3

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Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/035,617	Applicant(s) Tokimoto et al.
	Examiner Alecia Nelson	Group Art Unit 2775

☒ Responsive to communication(s) filed on *Mar 5, 1998* .

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire *three* month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) *1-22* is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) *1-4, 6-13, 15, and 18-22* is/are rejected.

☒ Claim(s) *5, 14, 16, and 17* is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐approved ☐disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____ .

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____ .

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. ***Claims 1-4, 7-13, and 18-22*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith (U.S. Patent No. 5,875,631) in view of Lee (U.S. Patent No. 5,410,232).

With reference to **claims 1-4, 11, 13, 20, and 21**, Smith teaches a control system (10), being operated by a joystick mechanism, having a pair of overcenter variable displacement pumps (12) and (13), each of which has a flow control element (21) and (22) disposed to control direction and flow rate of liquid output from the associated pump and a double acting actuator connected to the flow control element and having a spring disposed in each of first and second actuating chambers (28) and (29) to bias the flow control element to a centered zero output position. The control system includes a first conduit (36) communicating a supply conduit (33) with the first chambers, a first orifice (37) disposed in the first conduit (36), a second conduit (38) communicating the supply conduit with the second chambers (28) and a second orifice (39) disposed in the second conduit. A forward control valve (41) is disposed between a tank (32) and the first conduit (36) downstream of the first orifice (37). The forward control valve (41) has a

closed position blocking the first conduit (36) from the tank (32) and is movable to establish a variable orifice communicating the first conduit with the tank (a similar arrangement is used for the reverse control valve). A lever device , joystick, is provided for actuating each of the forward and reverse control valves independently of the other (see column 2, lines 17-61).

Smith fails to teach the usage of such device for inputting data to a computer, but however does teach its usage being associated with man controlled machinery.

With further reference to **claims 1, 11, and 21**, as well as **claims 7-10, 12, 18, 19, and 22** Lee teaches a spherical motor (10) has a plurality of fluid bearing mechanisms (33) mounted in the stator (12) for supporting and permitting rotation of the rotor (18) therein. At least three pairs of orthogonal fluid bearing mechanisms (33) are needed in order to provide at least three pairs of opposing normal forces acting radially towards the center of the rotor (18) (see column 6, lines 38-46). Each fluid bearing mechanism (33) discharges a jet of fluid, such as liquid or gas, at respective pressures P1 and P2 (see column 6, lines 52-54). The pressures P1 and P2 can be controlled by a fluid flow control valve (34). Fluid at constant pressure Ps is caused to flow through two paths (35a) and (35b), each comprising a constant restriction R in series with a variable restriction (see column 6, line 61-column 7, line 3). An orientation sensing system (40) for permitting non-contact position and direction measurement, of any spherical body, of the combined roll, yaw, and pitch motion, eliminates friction and stiction, and exhibits a relatively low inertia (see column 7, lines 28-35). Further it is disclose the interaction of the orientation sensing system (40) and the computer system (80) (see figure 3).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow a fluid coordinate device, as taught by Smith, to be used with a computer system as taught by Lee. This would thereby provide a lever device for usage with a computer system that would provide for actuating each of the forward and reverse control valves and providing smooth "feel" motion to the user when operating the device.

3. ***Claims 6 and 15*** are rejected under 35 U.S.C. 103(a) as being unpatentable over Smith in view of Lee as applied to **claims 1 and 11** above, and further in view of Klauk et al. (U.S. Patent No. 5,865,028).

Smith and Lee teach all that is needed as explained above with reference to claims 1 and 11, but fail to teach the usage of a piston.

Klauk et al. teaches the usage of a piston (118) which also the fluid to flow out of the piston chamber (114) through connecting line (136) and impedance (192) to non-return valve (140) (see column 8, lines 2-7).

Therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to allow the control device to embody a piston for control of the fluid. This would thereby provide a easier flow of the fluid through the device.

Allowable Subject Matter

4. ***Claims 5, 14, 16, and 17*** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

St Martin (U.S. Patent No. 5,014,596) teaches a remote control modification for a hydraulic steering system.

Sepehri et al. (U.S. Patent No. 5,218,820) teaches a hydraulic control system for controlling the motion of a double acting hydraulic actuator.

Rasmussen et al. (U.S. Patent No. 5,329,969) teaches a controller and a system for controlling the flow of fluid to a fluid pressure operated device.

Backer et al. (U.S. Patent No. 5,576,704) teaches a joystick that includes a control shaft having an operator handle and a base.

6. Any response to this action should be mailed to: Commissioner of Patents and Trademarks Washington, D.C. 20231; or faxed to (703)309-9051, (for formal communications intended for entry) or: (703)308-6606 (for informal or draft communications, please label "PROPOSED or

DRAFT). Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive Arlington, VA., Sixth floor (Receptionist).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alecia D. Nelson whose telephone number is (703)305-0143.

If attempts to reach the above examiner by telephone are unsuccessful, the examiner's contact person, Vincent Kovalick, can be reached at (703)305-3020, or the examiner's supervisor, Steve Saras, can be reached at (703)305-9720.

STEVEN J. SARAS
SUPERVISORY PATENT EXAMINER
GROUP 2700

adn/ADN
September 29, 1999